

CLAIMS

What is claimed is:

1. A hermetic seal for an electronic circuit die comprising:

an inorganic layer for preventing moisture from reaching the electronic circuit die; and

an organic layer outside the inorganic layer for protecting the inorganic layer.

2. The apparatus of claim 1 wherein the inorganic layer is adjacent to the organic layer.

3. The apparatus of claim 1 further comprising a plastic package.

4. The apparatus of claim 3 wherein the inorganic layer is outside the plastic package.

5. The apparatus of claim 4 wherein the inorganic layer is inside the plastic package.

6. The apparatus of claim 1 further comprising:
a lead; and

a wire;

wherein the inorganic layer contacts the lead.

20250705 092302

7. The apparatus of claim 1 wherein the inorganic layer comprises a material selected from the group consisting of metal oxides, silicon nitride, silicon carbide, aluminum nitride, and diamond-like carbons.

8. The apparatus of claim 1 wherein the organic layer comprises a material consisting of para-xylyene, hybrid solgel, and polymeric materials.

9. A method of making a hermetic seal comprising:

providing an inorganic layer for protecting from moisture; and

providing an organic layer for protecting the inorganic layer.

10. The method of claim 9 further comprising:

providing a lead, wherein the lead contacts the inorganic material.

11. The method of claim 9 further comprising providing a plastic package.

12. The method of claim 11, wherein the plastic package contacts the inorganic layer.

13. The method of claim 11, wherein the plastic package contacts the organic layer.

14. A hermetically sealed device comprising:
an electronic circuit die;
an inorganic layer outside the electronic circuit die; and
an organic layer outside the inorganic material.

15. The hermetically sealed device of claim 14 further comprising:
a wire; and
a lead;
wherein the inorganic layer contacts the lead.

16. The hermetically sealed device of claim 14 wherein the inorganic layer comprises a material selected from the group consisting of metal oxides, silicon nitride, silicon carbide, aluminum nitride, and diamond-like carbons.

17. The hermetically sealed device of claim 14 wherein the organic layer comprises a material consisting of para-xylylene, hybrid solgel, and polymeric materials.

18. The hermetically sealed device of claim 14
further comprising:

a wire;
a lead; and
a plastic package.

19. The hermetically sealed device of claim 18
wherein the plastic package contacts the inorganic layer.

20. The hermetically sealed device of claim 18
wherein the plastic package contacts the organic layer.

21. The hermetically sealed device of claim 14
wherein the inorganic layer encloses the electronic circuit
die.

202506-092302